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A DESCRIPTION OF THE FIRST LIVE POOULI CAPTURED

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ABSTRACT.—The Poouli (*Melamprosops phaeosoma*) is an endangered Hawaiian honeycreeper found only on Maui, Hawaii. It was rare at the time of its discovery in 1973, but by 1997 was on the brink of extinction with fewer than six individuals left. Two specimens were collected for the description of the species, but both proved to be immature by comparison with a pair of adults at a nest. Until 1997 no Poouli had ever been captured alive, and consequently descriptions of adult Poouli were produced from field observations. In 1997, I captured an adult male Poouli which is described here for the first time. Detailed comparisons of the plumage of this adult with that of an immature specimen and previous descriptions of the species are discussed in this paper, as are differences in plumage between adult and immature males and females that may aid the sexing and ageing of birds in the field. *Received 23 August 1997, accepted 17 March 1998.*

Discovered in 1973, the Poouli (*Melamprosops phaeosoma*; pronounced Po-oh-oo-lee) is a critically endangered Hawaiian honeycreeper found only at high elevation on northeastern Maui. Little is known about this elusive species (Engilis et al. 1996, Kepler et al. 1996). Two hatch-year birds were collected, preserved as specimens, and described in 1973 (Casey and Jacobi 1974), but the only descriptions of adult birds are from field observations (Engilis et al. 1996).

Between December 1995–May 1997, members of the Maui Critically Endangered Species Project studied the ecology of the Poouli in the Hanawi Natural Area Reserve, east Maui. This research involved banding of Poouli, but my early attempts at capturing Poouli failed because of their rarity. I often observed Poouli associated with Maui Parrotbill (*Pseudonestor xanthophrys*), so I captured, banded, and released Maui Parrotbill to determine with which individuals Poouli were associating.

METHODS

On 15 January 1997, while on a ridge at 1700 m elevation in Unit 3 of the reserve, I heard a pair of Maui Parrotbill approaching me. I set up one 6 m mist net and used playback of Maui Parrotbill calls and song to lure the birds to the net. The female Maui Parrotbill approached the net with an adult male Poouli close behind. The Poouli disappeared among the foliage in a nearby ohia (*Metrosideros polymorpha*) tree, but the Maui Parrotbill flew away. A minute later the Poouli reappeared in the same tree and flew straight into the mist net. This was the first Poouli ever captured.

I measured maximum leg width to determine band size, then banded the bird with both a US Fish and Wildlife Service metal band and plastic color bands for later field identification. I took standard biometrical measurements of maximum unflattened wing chord, exposed culmen, tarso-metatarsus, and tail as described by Pyle and coworkers (1987). I also recorded bill

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FRONTISPIECE. Dorsal and lateral view of plumage of adult male Poouli.

width and depth at the edge of the nostrils nearest the skull, skull length measured from the back of the head to the bill tip, and mass (g). I noted plumage and soft part colors following a morphology list designed by H. Baker for general field and museum use and the recommended format used for plumage description in Birds of North America species accounts, with colors from Smithe (1975). I then photographed and released the bird.

No detailed descriptions of the museum specimens of Poouli have been made, although Casey and Jacobi (1974) and Engilis and coworkers (1996) gave a good generalized description. I examined the holotype Poouli specimen (# 147112) in the Bishop Museum, Honolulu, collected 17 September 1973, and made a detailed description for comparison with the live bird (adult male). The holotype has been kept in a closed drawer in a specimen tray since its preparation, to minimize fading.

RESULTS

Morphometrics of live bird: Band size 1B was best fit. Age and sex: Adult male. Sex was determined by plumage characteristics (Casey and Jacobi 1974; Engilis et al. 1996, pers. obs.), and by observation of the bird's behavior, which included presenting nesting material to a female Maui Parrotbill. Breeding status: I examined the bird for the presence of either cloacal swelling or a brood patch and determined that the bird was not breeding. Wing length: 72 mm. Exposed culmen: 15.32 mm. Bill depth: 7.61 mm. Bill width: 6.33 mm. Skull length: 34.13 mm. Tarsus length: 24.92 mm. Tail length: 36 mm. Mass: 26.2 g. No body fat, lesions, food in crop, or molt. Some wear of remiges and rectrices, but not heavy. Figures 1 and 2 show the plumage of the adult male Poouli.

Plumage description of adult male Poouli (taken from the live bird in the field): forehead, supercilium, eyeline, lores, and narials: Jet Black (89). Crown: Glaucous (79) with feathers at front more Light Neutral Gray (85). Nape: Grayish Horn Color (91). Rictals: None. Rictal flanges: Blackish Neutral Gray (82). Upper back: mix of Glaucous (79) and Raw Umber (123). Lower back and rump: Raw Umber (123). Scapular: Sepia (119) with Hair Brown (119A) edging. Uppertail coverts: Verona Brown (223B) with hints of Antique Brown (37) and Raw Sienna (136). Rectrices: ground color Sepia (119), edged with Verona Brown (223B) with hints of Antique Brown (37) and Raw Sienna (136). Undertail coverts and crurals: Cinnamon (39). Vent: Pale Horn Color (92). Foremost flank feathers: pale grayish off-white ground color, overlain by dirty Pale Horn Color (92) and pale Tawny Olive (223D). Rearmost flank feathers: dark version of Cinnamon (39). Belly: pale grayish off-white ground color, overlain by dirty Pale Horn Color (92). Breast: Smoke Gray (44). Throat: lower throat white, upper throat and chin: Jet Black (89). Auricular: white, almost forming a complete collar round the back of the neck where it fades into pale gray. Malar: Jet Black (89). Lesser coverts: Sepia (119) with Hair Brown (119A), and edged with Grayish Horn Color (91). Alula, median, carpal, and primary coverts: Sepia (119) with Hair Brown (119A) edging. Greater coverts, primaries, secondaries, and tertials: Sepia (119) with Raw Umber (123) edging. Wing lining: dirty Smoke Gray (44). Underside of flight feathers dirty silvery gray.

Description of soft parts: Iris: Mars Brown (223A)–Verona Brown (223B). Ring of skin around eye, culmen, maxilla tomium, maxilla, mandible, mandibular tomium, and gonys: Blackish Neutral Gray (82). Tongue, inside of mouth, and bill: Pink (7). Legs and toes: Warm Sepia (221A). Claws: Sepia (219). Pads of feet: Warm Buff (118).

Plumage description of immature Poouli (holotype) for comparison (taken from specimen): Forehead: dull brown-black not as intense as Jet Black (89), with Dark Drab (119B) tips. Crown: darker Olive-Brown (28) with feathers at front Dark Drab (119B). Nape: richer version of Olive-Brown (28) with tone of Prout's Brown (121A). Supercilium: a dark, richer version of Sepia (119), with Dark Drab (119B) tips. Eyeline: a dark, richer version of Sepia (119) with Dark Drab (119B) tips. Lores: dull black with Dark Drab (119B) tips. Narials: Drab Gray (119D) to off-white. Rictals: None. Rictal flanges: Blackish Neutral Gray (82). Upper back: darker Prout's Brown (121A). Lower back: · Cinnamon Brown (33). Scapular: darker Prout's Brown (121A). Rump and undertail coverts: Cinnamon (123A). Uppertail coverts: Warm Sepia (221A). Rectrices: darker Prout's Brown (121A). Vent, crurals, and foremost flank feathers: pale Tawny Olive (223D). Rearmost flank feathers: Cinnamon (123A). Belly: paler version of Tawny Olive (223D) than around

crurals and vent. Breast: upper breast Drab Gray (119D). Shoulders: brownish Drab Gray (119D). Throat: upper throat mix of Sepia (119) feathers and lower Drab Gray (119D) feathers tipped with Cinnamon-Brown (33). Chin: Mix of Sepia (119) feathers and Cinnamon-Brown (33) tipped feathers. Auricular: upper feathers dark Grayish Brown (20), lower feathers pale Tawny Olive (223D). Malar: pale Tawny Olive (223D). Lesser, median, greater, and carpal coverts: a warmer brown version of Prout's Brown (121A). Primary coverts and alula: Vandyke Brown (121). Primaries: basic Fuscous (21), edged with Army Brown (219B). Secondaries and tertials: basic Fuscous (21), edged with Prout's Brown (121A). Wing lining: Difficult to examine, seemed off-white with heavy wash of pale Tawny Olive (223D).

Description of soft parts: Iris: dark brown (Casey and Jacobi 1973). Ring of skin round eye: no information. Culmen, maxilla, mandible, and tomia: almost Jet Black (89); darker than Blackish Neutral Gray (82). Gonys: tip Pale Horn Color (92). Tongue: no information. Inside of mouth and bill: no information. Legs and toes: Natal Brown (219A). Claws: pale Natal Brown (219A). Pads of feet: pale Natal Brown (219A) with a grayish tinge.

DISCUSSION

This description of an adult male Poouli resembles the previous description of an adult male taken from field observations (Engilis et al. 1996), but is more detailed. The description by Engilis and coworkers (1996) has a few notable differences from my description: they report nape as "crown behind mask gray, merging on the nape to dark brown", and belly as white, but I found the nape on the adult male I caught to be Grayish Horn Color (91), and the belly a dirty Grayish Horn Color (91). They also describe the pale auricular area as a patch, whereas I found that it seems to extend in a collar almost all the way round the back of the neck, turning into a very pale gray at the back of the neck. They describe the bill as glossy black, and legs as dark pink-brown, whereas the male I captured had a Blackish Neutral Gray (82) bill, distinct from black, and Warm Sepia (221A) colored legs.

Having examined both an adult male, and an immature male (holotype) in the hand I have determined that there are a number of differences between the plumage of the adult male and that of the immature male. The crown of the immature is dark Olive-Brown (28), rather than pale gray, while its mask is dull rather than glossy, and is a dark, rich Sepia (119), with brownish tips to some feathers, rather than Jet Black (89) as on the adult male. The mask on the immature is not very extensive, and in fact above the eye only the supercilium is dark colored and part of the mask, whereas the mask is very extensive on the adult male, extending a long way behind the eye as well as a long way above and below the eye. The back of the immature is a darker shade of brown, the nape is a rich Olive-Brown (28), not Grayish Horn Color (91), while underparts are pale Tawny Olive (223D), not grayish white.

Engilis and coworkers (1996), stated that the plumage of the immature male resembles that of the adult female. From my examination of the immature male and descriptions of the adult female (Engilis et al. 1996, Pratt et al. 1997), there appear to be two key differences which may help to discriminate between adult females and immature birds in the field. Adult females are grayish on the crown with medium gray underparts, whereas the crown of the immature male is dark Olive-Brown (28), with pale Tawny Olive (223D) underparts. Differences in crown color may be the more reliable feature to separate the two age groups (pers. obs.), because color seems to be an age related difference, whereas underpart color is more likely to be variable within and between age/sex groups (pers. obs.; T. Pratt, pers. comm.).

Although the adult male I captured differed from the immature Poouli holotype in plumage it was almost identical in morphometrics to the paratype, except for exposed culmen length (adult = 15.32 mm, paratype = 14.5 mm). The mass of the paratype is unknown, but the holotype had a mass of 25.5 g (Engilis et al. 1997) and the adult a mass of 26.2 g. Although it had less mass the holotype was slightly larger in morphometrics than the adult male and paratype.

My description of an adult male also suggests that the adult male may be distinguished from the adult female in the field by crown color which is Glaucous (79)–Light Neutral Gray (85) over the whole crown for males,

and is a grayish band on the front of the crown merging into Olive-Brown (28) towards the rear of the crown for females. Adult male Poouli can also be distinguished by their Cinnamon (39) leg feathering (gray on the female) and Cinnamon (39) undertail coverts, which are buff-gray on females (Engilis et al. 1996, pers. obs.). The underpart colors and sizes of mask referred to by Pratt and coworkers (1997) may also be useful indicators of sex.

There are no descriptions of the plumage of immature females (Pratt et al. 1997), but it is probably very similar to the plumage of the immature male as in many other honeycreeper species (pers. obs.). The holotype specimen was determined to be a male by Engilis and coworkers (1996), but the paratype could not be sexed. Overall size may help to indicate sex of birds in the field because the only adult female seen during this study was noticeably smaller than the adult male that was seen feeding it.

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LITERATURE CITED

Casey, T. L. C. and J. D. Jacobi. 1974. A new genus and species of bird from the island of Maui, Hawaii (Passeriformes: Drepanididae). Occas. Pap. Bernice P. Bishop Mus. 24:215–226.

Engilis, A., Jr., T. K. Pratt, C. B. Kepler, A. M. Ecton, and K. M. Fluetsch. 1996. Description of adults, eggshells, nestling, fledgling, and nest of the Poouli. Wilson Bull. 108:607–619.

Kepler, C. B., T. K. Pratt, A. M. Ecton, A. Engilis, and K. M. Fluetsch. 1996. Nesting behavior of the Po'ouli. Wilson Bull. 108:620–638.

Pratt, T. K., C. B. Kepler, and T. L. C. Casey. 1997. Po'ouli (*Melamprosops phaeosoma*). *In* The birds of North America, no. 272 (A. Poole and F. Gill, Eds.). The Academy of Natural Sciences, Philadelphia; The American Ornithologists' Union, Washington, D.C.

Pyle, P., S. N. G. Howell, R. P. Yunick, and D. F. DeSante. 1987. Identification guide to North American passerines. Slate Creek Press, Bolinas, California.

Smithe, F. B. 1975. Naturalist's color guide. American Museum of Natural History, New York.